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**Okamura**

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(54) **IMAGE PROCESSING UNIT, IMAGE PROCESSING METHOD, STORAGE MEDIUM SYNTHESIZING A SCENARIO INCLUDING AN OBJECT'S POSITION, SIZE AND DISPLAY TIME**

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(\*) **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.** ..... **345/619; 629/428; 463/35; 463/42**

(58) **Field of Search** ..... **345/433, 435, 345/619, 629, 581, 634, 641, 428; 463/35, 42**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,835,532 A \* 5/1989 Fant ..... 345/136

5,696,892 A \* 12/1997 Redmann et al. .... 345/430  
5,712,964 A \* 1/1998 Kamada et al. .... 345/418  
5,848,185 A \* 12/1998 Koga et al. .... 382/173  
5,898,430 A \* 4/1999 Matsuzawa et al. .... 345/302  
5,917,495 A \* 6/1999 Doi et al. .... 345/419  
5,990,901 A \* 11/1999 Lawton et al. .... 345/581  
6,072,479 A \* 6/2000 Ogawa ..... 345/326  
6,084,590 A \* 7/2000 Robotham et al. .... 345/419

\* cited by examiner

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(57) **ABSTRACT**

By reconfiguring configuration information items according to the need, it was made possible to implement a natural displayed scene. Initialize the time "t" to "0", extract the attribute information item (position, size and display time information) of every (object) from the configuration information items sent from a communication network after getting through the step and detect the objects coincident in display time with the time "t". Then, acquire an inclusive relation (correlation) between individual (objects) from the position and size information of the detected nodes (objects), reconfigure the configuration information items on the basis of the inclusive relation, further advance the time "t" by a predetermined frame rate and thereafter return to the step to repeat the above processing.

**21 Claims, 11 Drawing Sheets**

